

NIH-Funded Study Identifies Potential New Stroke Treatment

Preclinical study in rodents suggests that uric acid is ready for human clinical testing.

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In a preclinical study, rodents treated with uric acid showed improved long-term outcomes after acute ischemic stroke. The findings suggest that the treatment may work as an add-on therapy to standard stroke treatments in humans. The study was funded by the National Institutes of Health (NIH) and published in [Stroke](#).

Led by Enrique Leira, MD, and Anil Chauhan, PhD, at the University of Iowa, Iowa City, researchers used a well-established rodent model of stroke that closely simulates stroke in humans. They administered intravenous uric acid or saline control and monitored animals' recovery over one month. Behavioral and neurological assessments, including MRI scans, were used to evaluate the treatment's effects.

Mice treated with uric acid had better sensorimotor function—the primary outcome measure—30 days after stroke. More animals in the uric acid group also survived their stroke compared to control animals. However, some secondary outcome measures, such as brain damage, were not reduced.

The research teams used equal numbers of male and female animals and studied older, young, and obese mice, as well as rats with hypertension. Uric acid was efficacious across all groups, suggesting that the treatment could potentially perform well in human trials, including in people with stroke comorbidities.

[Ischemic stroke](#), a leading cause of disability and death in the United States, occurs when a blood clot or other blockage in an artery cuts off blood supply to the brain. Strokes are treated with medications or surgery aimed to break up clots and restore blood flow to affected brain areas. These therapies are highly effective, but not all people fully recover. Using additional treatments that protect brain tissue from damage, either immediately before or during clot removal, could boost the effects of standard treatments and greatly improve recovery in patients.

The study was part of the NIH's [Stroke Preclinical Assessment Network \(SPAN\)](#), a rigorous, transparent approach to preclinical research that mimics clinical trials. SPAN applies standard clinical practices, like randomization and blinded analysis, to animal studies, with the goal of

finding agents that are likely to succeed in clinical trials. Recently, the network [tested six promising stroke treatments](#) and found one, uric acid, that showed efficacy. The current study described the results of this trial.

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